

SEARCH REQUEST FORM

3-915

Examiner # (Mandatory): 76048

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Serial Number: 09/210,995

Results Format Preferred (circle): PAPER DISK E-MAIL

Title of Invention Multi-Component Vaccine comprising at least 2 antigens

Inventors (please provide full names): SHEENA LOOSMORE, JIAO-PING JANG

PELE CHONG, MICHEL H. KLEIN

Earliest Priority Date: 12/15/98 (12/15/97)

Keywords (include any known synonyms registry numbers, explanation of initialisms):

HIN47 protein.
Haemophilus influenzae
heat shock protein
Adhesin

Search Topic:

Please write detailed statement of the search topic, and the concept of the invention. Describe as specifically as possible the subject matter to be searched. Define any terms that may have a special meaning. Give examples of relevant citations, authors, etc., if known. You may include a copy of the abstract and the broadest or most relevant claim(s).

Please search the claims and
inventors. Thanks.

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Clerical Prep Time: 12

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Vendors (include cost where applicable)

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____ WWW/Internet

____ In-house sequence systems (list)

____ Dialog

____ Dr. Link

____ Westlaw

____ Other (specify)

HTRA, chp / HS , Immun Comp / Vacc?

1. 5,877,159, Mar. 2, 1999, Method for introducing and expressing genes in animal cells and live invasive bacterial vectors for use in the same; Robert J. Powell, et al., 514/44; 424/93.1, 93.21, 93.4, 184.1; 435/69.1, 235.1, 320.1, 472, 480; 536/24.1 [IMAGE AVAILABLE]
2. 5,804,194, Sep. 8, 1998, **Vaccines** containing a salmonella bacteria attenuated by mutation of the **htra** gene; Gordan Dougan, et al., 424/200.1, 93.2, 93.4, 235.1, 258.1 [IMAGE AVAILABLE]
3. 5,736,347, Apr. 7, 1998, Nucleic acids of Rochalimaea henselae and methods and compositions for diagnosing Rochalimaea henselae and Rochalimaea quintana infection; Burt E. Anderson, et al., 435/7.32, 6, 975; 436/811; 530/387.1, 388.4, 389.5, 391.1, 391.3 [IMAGE AVAILABLE]
4. 5,693,776, Dec. 2, 1997, Nucleic acids specific for Rochalimaea quintana; Burt E. Anderson, et al., 536/23.1, 23.7, 24.3 [IMAGE AVAILABLE]
5. 5,683,700, Nov. 4, 1997, Expression of recombinant proteins in attenuated bacteria; Ian George Charles, et al., 424/200.1, 93.2; 435/252.3, 252.8 [IMAGE AVAILABLE]
6. 5,644,047, Jul. 1, 1997, Compositions for diagnosing rochalimaea henselae and rochalimaea quintana infection; Burt E. Anderson, et al., 536/23.7, 23.1 [IMAGE AVAILABLE]
7. 5,547,664, Aug. 20, 1996, Expression of recombinant proteins in attenuated bacteria; Ian G. Charles, et al., 424/93.2, 93.4, 93.48;

HON W Rot / chg HSP / ~~Adhesin~~ / Immune Cons Vase 2 /

1. 5,834,187, Nov. 10, 1998, Sequence and analysis of LKP pilin structural genes and the LKP pili operon of nontypable Haemophilus influenzae; Bruce A. Green, et al., 435/6; 424/130.1, 141.1, 242.1; 435/7.3, 70.21, 91.2, 287.2, 326, 331, 332; 530/350, 388.1, 389.1, 866, 867; 536/23.1, 24.3, 24.32, 24.33 [IMAGE AVAILABLE]

2. 5,643,725, Jul. 1, 1997, Sequence and analysis of LKP pilin structural genes and the LKP pili operon of nontypable haemophilus influenzae; Bruce A. Green, et al., 435/6; 424/85.7; 514/2; 536/23.1,
23

1. 5,852,167, Dec. 22, 1998, Totally synthetic affinity reagents; Brian K. Kay, et al., 530/300, 350, 387.1, 387.2, 388.1 [IMAGE AVAILABLE]
2. 5,844,076, Dec. 1, 1998, Totally synthetic affinity reagents; Brian K. Kay, et al., 530/326 [IMAGE AVAILABLE]
3. 5,840,297, Nov. 24, 1998, **Vaccine** comprising anti-idiotypic antibody to chlamydia GLXA and process; Alex Bruce MacDonald, et al., 424/131.1, 134.1, 150.1, 151.1, 263.1; 435/327, 340, 342; 530/387.2, 388.4, 388.6 [IMAGE AVAILABLE]
4. 5,834,278, Nov. 10, 1998, Bacterial peptide methionine sulfoxide reductase an adhesion-associated protein, and antibiotic therapies based thereon; Elaine Tuomanen, et al., 435/189, 69.1, 252.3, 320.1, 885; 530/350, 412; 536/23.2, 23.7-[IMAGE AVAILABLE]
5. 5,834,187, Nov. 10, 1998, Sequence and analysis of LKP pilin structural genes and the LKP pili operon of nontypable Haemophilus influenzae; Bruce A. Green, et al., 435/6; 424/130.1, 141.1, 242.1; 435/7.3, 70.21, 91.2, 287.2, 326, 331, 332; 530/350, 388.1, 389.1, 866, 867; 536/23.1, 24.3, 24.32, 24.33 [IMAGE AVAILABLE]
6. 5,821,333, Oct. 13, 1998, Method for making heteromultimeric polypeptides; Paul J. Carter, et al., 530/350; 435/69.1, 69.7, 70.1, 71.1; 530/300, 387.1, 387.3 [IMAGE AVAILABLE]
7. 5,807,706, Sep. 15, 1998, Method for making heteromultimeric polypeptides; Paul J. Carter, et al., 435/69.1, 69.7, 70.1, 71.1; 530/300, 350, 387.1, 387.3 [IMAGE AVAILABLE]
8. 5,798,243, Aug. 25, 1998, Bacterial peptide methionine sulfoxide reductase, and adhesion-associated protein, and antibiotic therapies based thereon; Elaine Tuomanen, et al., 435/189, 69.1, 252.3, 320.1; 530/350; 536/23.2, 23.7 [IMAGE AVAILABLE]
9. 5,750,116, May 12, 1998, Haemophilus influenzae pilus **vaccines**; Charles C. Brinton, Jr., 424/242.1, 256.1 [IMAGE AVAILABLE]
10. 5,747,334, May 5, 1998, Random peptide library; Brian K Kay, et al., 435/320.1, 69.7, 252.3 [IMAGE AVAILABLE]
11. 5,731,168, Mar. 24, 1998, Method for making heteromultimeric polypeptides; Paul J. Carter, et al., 435/69.1, 69.7, 70.1, 71.1; 530/300, 350, 387.1, 387.3; 536/23.1, 23.4, 23.5, 23.53 [IMAGE AVAILABLE]
12. 5,716,793, Feb. 10, 1998, Method for diagnosing a patient for chlamydia; Alex Bruce MacDonald, et al., 435/7.36; 424/150.1, 163.1, 263.1; 435/7.32, 7.9, 7.92, 7.94, 7.95, 965; 436/518, 536, 548, 811; 530/388.4, 389.5 [IMAGE AVAILABLE]
13. 5,698,416, Dec. 16, 1997, Methods for production of antigens under control of temperature-regulated promoters in enteric bacteria; Marcia K. Wolf, et al., 435/69.1, 71.2, 252.33 [IMAGE AVAILABLE]
14. 5,679,551, Oct. 21, 1997, Unique double-stranded RNAs associated with the Trichomonas vaginalis virus; John F. Alderete, 435/70.1, 71.1, 258.1, 320.1; 536/23.1, 24.1, 24.3 [IMAGE AVAILABLE]

15. 5,662,908, Sep. 2, 1997, Invasive microorganisms; Stanley Falkow, et al., 424/200.1, 235.1, 258.1; 435/252.3, 252.8 [IMAGE AVAILABLE]
16. 5,656,271, Aug. 12, 1997, Oral **vaccine** comprising anti-idiotypic antibody to chlamydia glycolipid exoantigen and process; Alex Bruce MacDonald, et al., 424/131.1, 151.1, 263.1, 486, 492, 493, 497; 530/387.2, 388.4, 389.5 [IMAGE AVAILABLE]
17. 5,643,725, Jul. 1, 1997, Sequence and analysis of LKP pilin structural genes and the LKP pili operon of nontypable haemophilus influenzae; Bruce A. Green, et al., 435/6; 424/85.7; 514/2; 536/23.1, 23.7, 24.3, 24.33 [IMAGE AVAILABLE]
18. 5,625,033, Apr. 29, 1997, Totally synthetic affinity reagents; Brian K. Kay, et al., 530/324; 435/7.1, 7.2, 69.1, 69.7, 252.3, 320.1; 530/300, 350; 536/23.1, 23.5 [IMAGE AVAILABLE]
19. 5,578,309, Nov. 26, 1996, Candida albicans phosphomannoprotein adhesion as a **vaccine**; Jim E. Cutler, et al., 424/274.1, 184.1 [IMAGE AVAILABLE]
20. 5,498,538, Mar. 12, 1996, Totally synthetic affinity reagents; Brian K. Kay, et al., 435/69.1, 6, 69.7; 536/23.4 [IMAGE AVAILABLE]
21. 5,338,842, Aug. 16, 1994, Yersinia INV nucleic acids; Ralph R. Isberg, et al., 536/23.7; 435/6, 69.1, 252.3, 252.33, 320.1; 536/24.32 [IMAGE AVAILABLE]
22. 5,239,066, Aug. 24, 1993, Yersinia ail nucleic acids; St. Geme, III: Joseph W., et al., 536/23.7; 435/6, 69.1, 252.3, 252.33, 320.1; 536/24.32 [IMAGE AVAILABLE]

1. 5,750,116, May 12, 1998, Haemophilus influenzae pilus vaccines;
Charles C. Brinton, Jr., 424/242.1, 256.1 [IMAGE AVAILABLE]

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US PAT NO: 5,750,116 [IMAGE AVAILABLE]

L38: 1 of 1

DETDESC:

DETD(18)

It is reasonable to expect that the pilin, **chaperone**, anchor, minor tip and large minor tip **adhesin** proteins of an H. influenzae pilus must interact with each other during the pilus assembly process. Accordingly, it is believed. . . . produce can be purified and standardized individually, before mixing in the desired proportions with other pilus types to form a **multivalent vaccine**.